

What is Claimed Is:

09702667.110.100

1           1.     A magnetic recording medium comprising:  
2                 a non-magnetic substrate;  
3                 an underlayer on a non-magnetic substrate;  
4                 a first magnetic layer on the underlayer; and  
5                 a second magnetic layer on the first magnetic layer; wherein:  
6                     the first magnetic layer exhibits a higher signal-to-  
7 media-noise ratio (SMNR) than the second magnetic layer; and  
8                     the second magnetic layer exhibits a higher magnetic  
9 saturation (Ms) than the first magnetic layer.

1           2.     The magnetic recording medium according to claim 1, wherein:  
2                 the first and second magnetic layers each contains cobalt (Co),  
3 chromium (Cr) and platinum (Pt);  
4                 the first magnetic layer has a higher Cr content than the second  
5 magnetic layer; and  
6                 the second magnetic layer has a higher Co content than the first  
7 magnetic layer.

1           3.     The magnetic recording medium according to claim 2, wherein:  
2                 the first magnetic layer contains:  
3                     about 20 to about 22 at.% Cr;  
4                     about 8 to about 10 at.% Pt;  
5                     about 6 to about 8 at.% boron (B); and  
6                     the remainder Co; and  
7                 the second magnetic layer contains  
8                     about 12 to about 16 at.% Cr;  
9                     about 6 to about 12 at.%Pt;  
10                  about 2 to about 4 at.% tantalum (Ta); and  
11                  the remainder Co.

1           4.     The magnetic recording medium according to claim 2, wherein:  
2                 the first magnetic layer contains:  
3                     about 20 to about 22 at.% Cr;  
4                     about 8 to about 10 at.% Pt;  
5                     about 6 to about 8 at.% B; and  
6                     the remainder Co; and  
7                 the second magnetic layer contains:  
8                     about 12 to about 16 at.% Cr;  
9                     about 6 to about 12 at.% Pt;  
10                  about 6 to about 8 at.% B; and  
11                  the remainder Co.

1           5.     The magnetic recording medium according to claim 1, wherein  
2     the underlayer is a composite comprising two underlayers each containing  
3     chromium (Cr).

1           6.     The magnetic recording medium according to claim 5,  
2     comprising:  
3                 a first underlayer comprising a Cr alloy on the non-magnetic  
4     substrate; and  
5                 a second underlayer comprising a Cr alloy different from the Cr  
6     alloy of the first underlayer, on the first underlayer.

1           7.     A magnetic recording medium comprising:  
2                 a non-magnetic substrate; and  
3                 means for achieving a high SMNR, narrow half-amplitude  
4     pulse width, high resolution and high magnetic saturation.

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